

WHAT IS CLAIMED IS:

1. A method for assembling a gas turbine engine, said method comprises:

coupling a seal assembly including a brush seal and a plurality of seal bristles to a first rotatable shaft; and

positioning the seal assembly such that the seal bristles contact a second rotatable shaft to facilitate sealing between the first and second rotatable shafts during gas turbine engine operation.

2. A method in accordance with Claim 1 wherein coupling a seal assembly including a brush seal and a plurality of seal bristles to a first rotatable shaft further comprises coupling the seal assembly to the shaft such that the brush seal sealing contacts the first rotatable shaft and such that the plurality of brush bristles extend substantially radially outward from the brush seal.

3. A method in accordance with Claim 1 wherein coupling a seal assembly including a brush seal and a plurality of seal bristles to a first rotatable shaft further comprises coupling the seal assembly to the shaft such that seal assembly rotates concurrently with the first rotatable shaft in a first direction, and such that the plurality of brush bristles contact a second rotatable shaft rotating in an opposite second direction.

4. A method in accordance with Claim 1 wherein coupling a seal assembly including a brush seal and a plurality of seal bristles to a first rotatable shaft further comprises coupling the seal assembly to the shaft such that seal assembly rotates concurrently with the first rotatable shaft in a first direction, and such that the plurality of brush bristles contact a second rotatable shaft rotating in the same direction.

5. A method in accordance with Claim 1 wherein coupling a seal assembly including a brush seal and a plurality of seal bristles to a first rotatable shaft further comprises coupling the seal assembly to the first rotatable shaft such that the

seal assembly is intermediate a pair of opposite ends of the first rotatable shaft, and such that the plurality of brush bristles contact the second rotatable shaft intermediate a pair of opposite ends of the second rotatable shaft.

6. A seal assembly for a gas turbine engine including a first rotatable shaft and a second rotatable shaft, said seal assembly comprising a brush seal and a plurality of seal projections extending outwardly from said brush seal, said brush seal sealingly coupled to the first rotatable shaft such that said plurality of seal projections contact the second rotatable shaft to facilitate sealing between the first and second rotatable shafts.

7. A seal assembly in accordance with Claim 6 wherein said brush seal rotates concurrently with the first rotatable shaft.

8. A seal assembly in accordance with Claim 6 wherein the first rotatable shaft includes a pair of opposite ends, said brush seal is coupled to the first rotatable shaft intermediate the first shaft ends.

9. A seal assembly in accordance with Claim 6 wherein the second rotatable shaft includes a pair of opposite ends, said plurality of seal projections contact the second shaft intermediate the second shaft ends.

10. A seal assembly in accordance with Claim 6 wherein said plurality of projections comprise a plurality of bristles formed integrally with said brush seal.

11. A seal assembly in accordance with Claim 6 wherein said plurality of seal projections facilitate reducing leakage through said seal assembly due to thermal, centrifugal, and gyroscopic forces.

12. A gas turbine engine comprising:

a first rotatable shaft;

a second rotatable shaft; and

a seal assembly extending between said first and second rotatable shafts to facilitate preventing leakage through a gap defined between said first and second rotatable shafts, said seal assembly comprising a brush seal and a plurality of seal projections extending outwardly from said brush seal, said brush seal sealingly coupled to the first rotatable shaft such that said plurality of seal projections contact the second rotatable shaft to facilitate sealing between the first and second rotatable shafts.

13. A gas turbine engine in accordance with Claim 6 wherein said seal assembly brush seal rotates concurrently with the first rotatable shaft.

14. A gas turbine engine in accordance with Claim 13 wherein said first rotatable shaft comprises a pair of opposite ends, said second rotatable shaft comprises a pair of opposite ends, said brush seal is coupled to said first rotatable shaft intermediate said first rotatable shaft ends.

15. A gas turbine engine in accordance with Claim 13 wherein said first rotatable shaft comprises a pair of opposite ends, said second rotatable shaft comprises a pair of opposite ends, said plurality of seal projections contact said second rotatable shaft intermediate said second rotatable shaft ends.

16. A gas turbine engine in accordance with Claim 13 wherein said seal assembly plurality of projections comprise a plurality of bristles formed integrally with said brush seal.

17. A gas turbine engine in accordance with Claim 13 wherein said seal assembly plurality of seal projections facilitate reducing leakage through said seal assembly due to thermal, centrifugal, and gyroscopic forces.

18. A gas turbine engine in accordance with Claim 13 wherein said rotatable first shaft rotates in a first direction, said second rotatable shaft rotates in a second direction that is opposite said first direction of rotation.

19. A gas turbine engine in accordance with Claim 13 wherein said first and second rotatable shafts rotate in the same rotational direction.

20. A gas turbine engine in accordance with Claim 13 wherein said seal assembly facilitates extending a useful life of said gas turbine engine.